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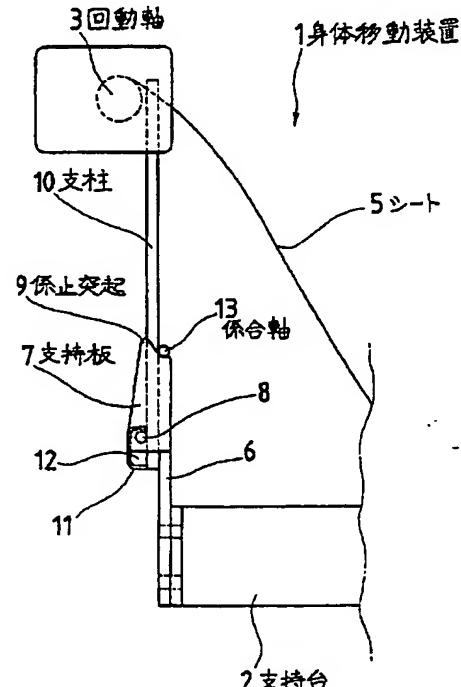
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(54)【発明の名称】 身体移動装置

(57)【要約】

【課題】 摔瘡の発生を防ぐことができ、使用者の身体を支持台から容易に移すことが可能で、支柱が倒りに倒れることがなく安全性が高い身体移動装置を提供すること。

【解決手段】 支持台2の両側に支柱10が起倒自在に立設され、支柱10の上端に回転軸3が平行に配置され、回転軸3間にシート5が架設され、シート5が回転軸3の回動に伴って幅方向に移動する身体移動装置1において、支持台2の外側面から支持板7が張り出され、支持板7の一面に臨んで支柱10の下端部が上下動及び外方に回動可能に設けられ、支持板7の上端外側に係止突起9が突設され、支柱10が下降したとき係止突起9の内側端に係止され、支柱10が上昇したとき係止突起9より高い位置に達する係合軸8が支柱10に設けられる。



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## 【特許請求の範囲】

【請求項1】 支持台の前後の両側にそれぞれ支柱が側方に向けて起倒自在に立設されると共に、該前後の支柱の上端に互いに平行な回動軸が配置され、これら回動軸間にシートが緩みをもって架設され、該シートが前記回動軸の回動に伴って幅方向に移動する身体移動装置において、前記支持台の外側面に支持板が外方に張り出して設けられると共に、該支持板の一面に臨んで前記支柱の下端部が上下動及び幅方向外側に回動可能に設けられ、前記支持板の外側上端に係止突起が上方に向けて突設され、前記支柱が下降したとき前記係止突起の内側端に係止されると共に、該支柱が上昇したとき前記係止突起より高い位置に達する係合軸が前記支柱に設けられたことを特徴とする身体移動装置。

【請求項2】 前記支持板の一面下部に支持軸が突設され、前記支柱の下端部に前記支持軸に上下動可能に係合される長孔が設けられたことを特徴とする請求項1に記載された身体移動装置。

【請求項3】 前記回動軸の一端にこれを回動駆動するモータが接続されたことを特徴とする請求項1又は2に記載された身体移動装置。

## 【発明の詳細な説明】

## 【0001】

【発明の属する技術分野】本発明は、病弱者、身体障害者或いは寝たきり老人のように横臥状態にある人の体位を変えると共に、他の台へ移動する身体移動装置に関する。

## 【0002】

【従来の技術】病弱者、身体障害者或いは寝たきり老人のように長期に亘って横臥状態を続け、しかも寝返り等が困難な人の身体には、血行が阻害されて寝台に当たっている部分に褥瘡が発生し、非常な苦痛を味わうことが多い。そこで、平行する回転棒状体間を、凹面湾曲部を形成しながら移動する摩擦係数の大きい身体収納シートを有し、身体収納シートを移動することによって凹面湾曲部に横臥した人の体位を変えることができる身体回動装置が実開昭61-67727号公報に開示されている。

【0003】このものは、回転棒状体を支持する支柱を倒すことによって、容易に身体を寝台からストレッチャーへ或いはストレッチャーから手術台へ移動することができるようになっている。しかし、傍らに別の受け台が設置されていない状態で不意に支柱が倒れると非常に危険であり、身体の自由が利かない人が倒れた支柱の側から落下すると重大な事故が発生しかねない。

## 【0004】

【発明が解決しようとする課題】本発明は、病弱者、身体障害者、寝たきり老人等の姿勢を変えることによって褥瘡の発生を防ぐことができ、これらの人の身体を支持台から容易に移すことが可能で、しかも支柱が倒りに倒

れることがなくて安全性が高い身体移動装置を提供することを目的とする。

## 【0005】

【課題を解決するための手段】本発明の身体移動装置は、支持台の前後の両側にそれぞれ支柱が側方に向けて起倒自在に立設されると共に、該前後の支柱の上端に互いに平行な回動軸が配置され、これら回動軸間にシートが緩みをもって架設され、該シートが前記回動軸の回動に伴って幅方向に移動し、前記支持台の外側面に支持板が外方に張り出して設けられると共に、該支持板の一面に臨んで前記支柱の下端部が上下動及び幅方向外側に回動可能に設けられ、前記支持板の外側上端に係止突起が上方に向けて突設され、支柱が下降したとき前記係止突起の内側端に係止されると共に、支柱が上昇したとき前記係止突起より高い位置に達する係合軸が前記支柱に設けられる。

【0006】支柱を立設してシート上に患者が横たわっている時は、支柱、回動軸及びシートの重量ならびに患者の体重によって支柱が下降しており、係合軸が係止突起の内側に係合して支柱が倒れるのを抑止している。また、支柱を上昇させると係合軸が係止突起より高い位置に達して両者の係合が外れ、支柱を幅方向外側に倒すことができ、これに伴って起立していたシートの側部が倒れる。

【0007】前記支持板の一面下部に支持軸が突設され、前記支柱の下端部に前記支持軸に上下動可能に係合される長孔が設けられることがある。前記回動軸の一端にこれを回動駆動するモータが接続されることは望ましい。

## 【0008】

【発明の実施の形態】身体移動装置1は、図3に示すように、病弱者、身体障害者、寝たきり老人等の使用者が横臥状態で支持される支持台2と、支持台2の両側上方に回動自在にかつ互いに平行に配置された一対の回動軸3と、両端が回動軸3に巻回されて両側の回動軸3間に緩みをもって架設されると共に、回動軸3の回動に伴って幅方向に移動するシート5とを備える。

【0009】支持台2はベッドの形態をなしており、図1及び図2に示すように、その両側面前後端に帯板状の起立部材6が上方に向けて立設され、起立部材6の上端部にそれぞれ支持板7が外方に張り出して設けられている。支持板7は、図4及び図5に示すように、各起立部材6の両側縁にそれぞれ対向するよう装着され、対向する支持板7の下部間に支持軸8が架設されている。また、支持板7の上端外側部には係止突起9が上方に向けて突設されている。なお、起立部材6はその下部に穿設された複数の固定孔4を介して支持台2の枠に固定されるが、必要であれば、起立部材6と支持台2との接合部に補強板を介在することもできる。

【0010】さらに、対向する支持板7の間において起

立部材6の外側面に支柱10の下端部が重合され、側方に向けて起倒自在に立設されている。支柱10は起立部材6と同幅の帯板より成り、図6及び図7に示すように、その外側面下部に上下方向に長い断面溝型の金具11が装着され、金具11の内側に長孔12が形成されている。この長孔12には、図1に示すように、支持板7に取付けられた支持軸8が上下動可能に挿通されており、この結果、支柱10は上下動及び支持台2の幅方向外側に回動することができるようになっている。

【0011】支柱10の内側面において、支持軸8が長孔12の上端に当接している時係止突起9の内側縁に係合される位置に、係合軸13が幅方向に沿って装着される。

【0012】一方、支柱10が上昇して支持軸支8が長孔12の上端に当接すると、この係合軸13は係止突起9より高い位置に達するようになっている。

【0013】従って、支柱10は、その下端部が起立部材6の外側面に当接しているので支持台2の幅方向内側に倒れることができ無いのはもちろんであるが、係合軸13が係止突起9の内側縁に係合されている状態では、幅方向外側にも回動することができない。しかし、支柱10を強制的に上昇させて係合軸13と係止突起9との係合を外すと、支柱10を支持台2の幅方向外側に倒すことができる。

【0014】支柱10の上端外側面に筒体14が装着され、この筒体14に回動軸3の端部が回動自在に挿通され、各前後の支柱10の上端に互いに平行な回動軸3が配置されている。そして、各回動軸3の一端にこれを回動駆動するブレーキ付きモータ15が接続され、このモータ15が筒体14の端面に支持されている。

【0015】左右の回動軸3の外周に回動軸3間の距離より幅広いシート5の両側端部が巻回されて回動軸3間にシート5が架設されている。シート5は強靱で比較的摩擦力の大きい素材より成る。また、シート5は緩みをもって回動軸3間に架設されるので、両側の支柱10を起立させるとシート5の中央部は弛んで凹部が形成され、この凹部に使用者が横臥することができる。使用者が横臥すると、その体重によってシート5が緊張する。

【0016】そして、モータ15を駆動すると回動軸3が正逆両方向に回転し、その回動に伴ってシート5が幅方向両側に移動する。両側の支柱10を起立させた状態ではシート5の両側部が壁状に起立しているので、シート5が移動してもその上に横臥している使用者の位置移動は規制される。この結果、使用者の身体はその場で回転して体位が変わり、支持台2の支持面に接触する部位が変わって床ずれが発生しない。

【0017】使用者を身体移動装置1からストレッチャ一等の他の台に移す場合は、支持台2の一側に他の台を設置し、上記したように一側の支柱10を倒してシート5の起立している一側端部を倒し、モータ15を駆動し

てシート5を他の台の側へ移動させる。すると、シート5の上に横たわっている使用者の位置移動を規制するシート5の立上り部がなくなるので、使用者の身体は他の台に向かって移動する。

【0018】なお、回動軸3の一端にモータ15に代えてクランク状の取っ手を接続し、回動軸3を手動で回転させようにも良い。

#### 【0019】

【発明の効果】本発明の身体移動装置によれば、支柱を起立させた状態で回動軸を回転させるだけで、シート5に横臥した使用者の身体を回転させて支持台に接触する部位を変えることができるので、褥瘡の発生を防止することができ、しかも、人手によって使用者の身体を持ち上げる必要が無いため、介護者の負担が大幅に軽減される。

【0020】また、支持台の片側に他の台を設置し、片側の支柱を倒した状態で回動軸を回転させると、シート5の移動に伴い使用者の身体が他の台に向かって移動するので、きわめて容易に使用者の身体を他の台に移動させることができとなる。

【0021】さらに、強制的に支柱を上昇させない限り支柱及びシート5が倒れることはないので、使用者が支持台から落下する心配が無く、不測の事故を防ぐことができて安全性が高い。

#### 【図面の簡単な説明】

【図1】本発明の実施例に係る身体移動装置の要部全面図

【図2】本発明の実施例に係る身体移動装置の要部の一部断面側面図

【図3】本発明の実施例を示す身体移動装置の断面図

【図4】起立部材及び支持板の側面図

【図5】起立部材及び支持板の端面図

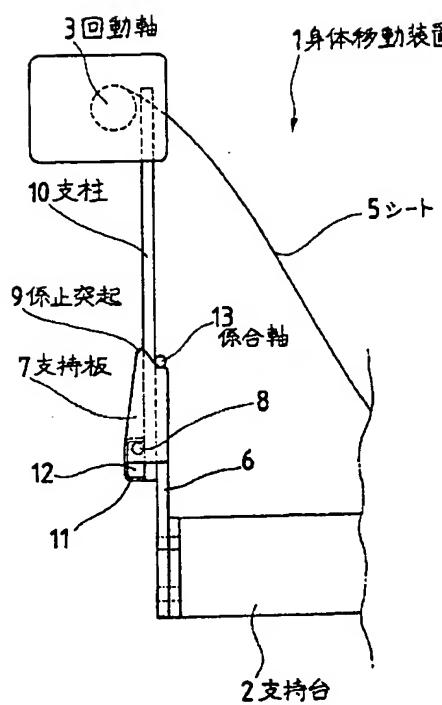
【図6】支柱の側面図

【図7】支柱の端面図

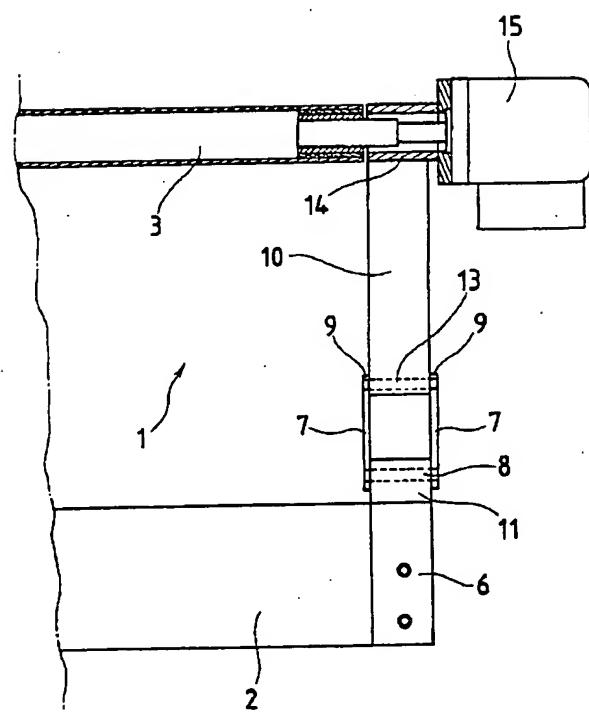
#### 【符号の説明】

- 1 身体移動装置
- 2 支持台
- 3 回動軸
- 4 固定孔
- 5 シート
- 6 起立部材
- 7 支持板
- 8 支持軸
- 9 係止突起
- 10 支柱
- 11 金具
- 12 長孔
- 13 係合軸
- 14 筒体
- 15 モータ

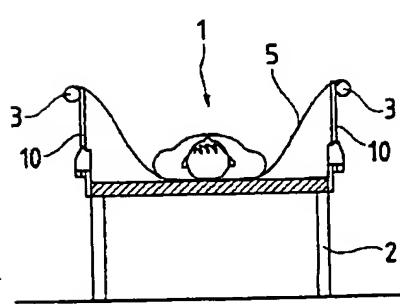
【図1】



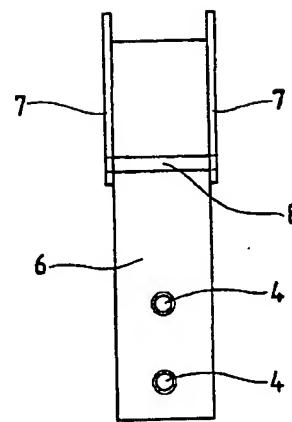
【図2】



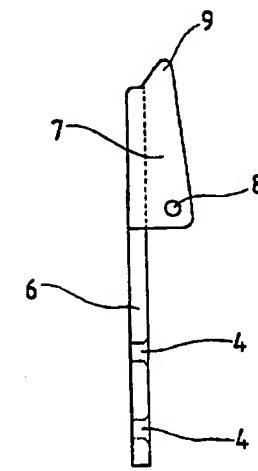
【図3】



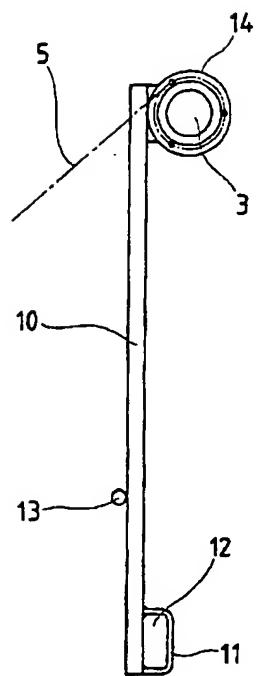
【図4】



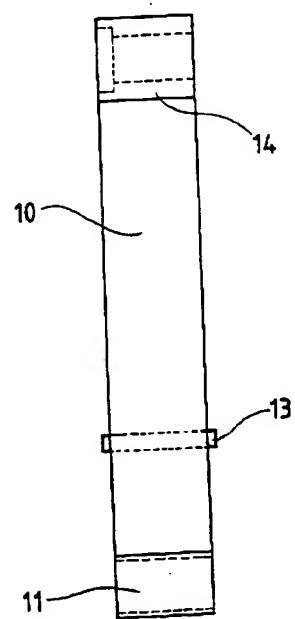
【図5】



【図6】



【図7】



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## DETAILED DESCRIPTION

## [Detailed Description of the Invention]

## [0001]

[The technical field to which invention belongs] this invention relates to the body move equipment which moves to other bases while changing the posture of those who are in a lying-down state like the invalid, a physically handicapped person, or a bedridden elderly.

## [0002]

[Description of the Prior Art] It continues like the invalid, a physically handicapped person, or a bedridden elderly at a long period of time, and a lying-down state is continued, moreover, in a difficult person's body, the decubitus occurs into the portion which circulation was checked and has hit the berth, and changing sides etc. experiences an extraordinary pain in many cases. Then, it has the body receipt sheet with large coefficient of friction which moves between parallel rotation rod-like structures while forming a concave surface bend, and the body rotation equipment into which the posture of the person who lay in the concave surface bend is changeable is indicated by JP,61-67727,U by moving a body receipt sheet.

[0003] this thing pushes down the support which supports a rotation rod-like structure -- easy -- the body -- the stretcher from a berth -- or it can move now to an operating table from a stretcher However, if it is very dangerous if a support breaks down from the state where another cradle is not installed in the side, suddenly, and it falls from the support side from which those against whom the freedom of the body is not effective broke down, serious accident may occur.

## [0004]

[Problem(s) to be Solved by the Invention] By changing the posture of the invalid, a physically handicapped person, a bedridden elderly, etc., this invention can prevent generating of the decubitus, can move these men's body from a susceptor easily, and aims at a support not falling indiscriminately moreover and safety offering high body move equipment.

## [0005]

[Means for Solving the Problem] While a support is set up free [ \*\*\*\* ] towards the side by the both sides before and behind a susceptor, respectively, the body move equipment of this invention The parallel rotation shaft of each other is arranged at the upper limit of the support before and behind this, and a sheet is constructed with slack between these rotation shafts. While this sheet moves crosswise with rotation of the aforementioned rotation shaft, and a support plate \*\*\*\*\*'s to the method of outside and is prepared in the lateral surface of the aforementioned susceptor When attend the whole surface of this support plate, the soffit section of the aforementioned support is prepared possible [ vertical movement and rotation on the crosswise outside ], a stop salient protrudes on the outside upper limit of the aforementioned support plate towards the upper part and a support descends, while being stopped by the inside edge of the aforementioned stop salient When a support goes up, the engagement shaft which arrives at a position higher than the aforementioned stop salient is prepared in the aforementioned support.

[0006] When a support is set up and the patient lies on the sheet, it has inhibited that the support is descending to the weight row of a support, a rotation shaft, and a sheet with a patient's weight, an engagement shaft is engaged inside a stop salient, and a support falls. Moreover, if a support is raised, an engagement shaft will arrive at a position higher than a stop salient, both engagement will separate, a support can be moved to a crosswise outside, and the flank of a sheet which had stood up

in connection with this falls.

[0007] A support shaft protrudes on the whole surface lower part of the aforementioned support plate, and the long hole which engages with the aforementioned support shaft possible [ vertical movement ] at the soffit section of the aforementioned support may be prepared. It is desirable to connect to the end of the aforementioned rotation shaft the motor which carries out the rotation drive of this.

[0008]

[Embodiments of the Invention] The susceptor 2 by which users, such as invalid, a physically handicapped person, and a bedridden elderly, are supported in the state of lying down as body move equipment 1 is shown in drawing 3. It has the rotation shaft 3 of the couple arranged in parallel mutually free [ the rotation to the both-sides upper part of a susceptor 2 ], and the sheet 5 which moves crosswise with rotation of the rotation shaft 3 while ends are wound around the rotation shaft 3 and constructed with slack between the rotation shafts 3 of both sides.

[0009] the susceptor 2 is making the gestalt of a bed and shows it to drawing 1 and drawing 2 -- as -- the both-sides presence back end -- strip-like standing up -- a member 6 sets up towards the upper part -- having -- standing up -- a support plate 7 \*\*\*\*\*'s to the method of outside, and is prepared in the upper-limit section of a member 6, respectively a support plate 7 is shown in drawing 4 and drawing 5 -- as -- each standing up -- it is equipped and the support shaft 8 is constructed between the lower parts of the support plate 7 which counters so that the edges on both sides of a member 6 may be countered, respectively Moreover, the stop salient 9 protrudes on the upper-limit lateral part of a support plate 7 towards the upper part. in addition, standing up -- two or more fixation in which the member 6 was drilled by the lower part -- although fixed to the frame of a susceptor 2 through a hole 4, if required -- standing up -- a back up plate can also be placed between the joint of a member 6 and a susceptor 2

[0010] furthermore, between the support plates 7 which counter -- setting -- standing up -- the polymerization of the soffit section of a support 10 is carried out to the lateral surface of a member 6, and it is set up free [ \*\*\*\* ] towards the side a support 10 -- standing up -- as it consists of the strip of a member 6 and this width of face and is shown in drawing 6 and drawing 7, the lateral-surface lower part is equipped with the metallic ornaments 11 of a cross-section ditch type long in the vertical direction, and the long hole 12 is formed inside metallic ornaments 11. The support shaft 8 attached in the support plate 7 as shown in drawing 1 is inserted in this long hole 12 possible [ vertical movement ], consequently a support 10 can be rotated now on vertical movement and the crosswise outside of a susceptor 2.

[0011] In the inside side of a support 10, the position which engages with the inside edge of the stop salient 9 when the support shaft 8 is in contact with the upper limit of a long hole 12 is equipped with the engagement shaft 13 along the cross direction.

[0012] On the other hand, if a support 10 goes up and the support support 8 contacts the upper limit of a long hole 12, this engagement shaft 13 will arrive at a position higher than the stop salient 9.

[0013] therefore, the support 10 -- the soffit section -- standing up -- although it can fall inside [ crosswise ] a susceptor 2 and there is nothing of course since it is in contact with the outside side of a member 6, the engagement shaft 13 cannot rotate on the crosswise outside in the state where it is engaging with the inside edge of the stop salient 9, either However, a support 10 can be moved to the crosswise outside of a susceptor 2, if a support 10 is raised compulsorily and engagement to the engagement shaft 13 and the stop salient 9 is removed.

[0014] The upper-limit outside side of a support 10 is equipped with a barrel 14, the edge of the rotation shaft 3 is inserted in this barrel 14 free [ rotation ], and the parallel rotation shaft 3 of each other is arranged at the upper limit of the support 10 after forward [ each ]. And the motor 15 with a brake which carries out the rotation drive of this is connected to the end of each rotation shaft 3, and this motor 15 is supported by the end face of a barrel 14.

[0015] The both-sides edge of the sheet 5 broader than the distance between the rotation shafts 3 is wound around the periphery of the rotation shaft 3 on either side, and the sheet 5 is constructed between the rotation shafts 3. A sheet 5 is tough and consists of a material with comparatively large frictional force. Moreover, since a sheet 5 is constructed between the rotation shafts 3 with slack, if the support 10 of both sides is made to stand up, the center section of the sheet 5 slackens, a crevice

is formed, and a user can lie in this crevice. Lying down of a user strains a sheet 5 with the weight. [0016] And if a motor 15 is driven, the rotation shaft 3 will rotate in right reverse both directions, and a sheet 5 will move to crosswise both sides with the rotation. In the state where the support 10 of both sides was made to stand up, since the both-sides section of a sheet 5 has stood up in the shape of a wall, even if a sheet 5 moves, the impaction efficiency of the user who lies on it is regulated. Consequently, it rotates on that spot, and a user's body changes posture, changes the part in contact with the back face of a susceptor 2, and a bedsore does not generate it.

[0017] When moving a user from body move equipment 1 to other bases, such as a stretcher, as other bases are installed and being described above to the unilateral of a susceptor 2, the unilateral edge where the support 10 of an unilateral was pushed down and the sheet 5 has stood up is pushed down, a motor 15 is driven, and a sheet 5 is moved to other bases side. Then, since the standup section of the sheet 5 which regulates the impaction efficiency of the user who lies on the sheet 5 is lost, a user's body moves toward other bases.

[0018] In addition, it replaces with a motor 15, a crank-like handle is connected to the end of the rotation shaft 3, and you may make it rotate the rotation shaft 3 manually.

[0019]

[Effect of the Invention] Since the part which is made to rotate the body of the user who lay on the sheet, and contacts a susceptor is changeable only by rotating a rotation shaft in the state where the support was made to stand up according to the body move equipment of this invention, generating of \*\*\*\* can be prevented, and in order that there may moreover be no need of raising a user's body by the help, a care worker's burden is mitigated sharply.

[0020] Moreover, other bases are installed in one side of a susceptor, and if a rotation shaft is rotated where the support of one side is pushed down, since a user's body will move toward other bases with movement of a sheet, it becomes possible to move a user's body to other bases very easily.

[0021] Furthermore, since a support and a sheet do not fall unless a support is raised compulsorily, there is no fear of a user falling from a susceptor while in use, unexpected accident can be prevented, and safety is high.

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[Translation done.]

**\* NOTICES \***

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**CLAIMS**

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**[Claim(s)]**

[Claim 1] While a support is set up free [ \*\*\*\* ] towards the side by the both sides before and behind a susceptor, respectively In the body move equipment which the parallel rotation shaft of each other is arranged at the upper limit of the support before and behind this, a sheet is constructed with slack between these rotation shafts, and this sheet moves crosswise with rotation of the aforementioned rotation shaft While a support plate is jutted out and prepared in the method of outside in the outside side of the aforementioned susceptor When attend the whole surface of this support plate, the soffit section of the aforementioned support is prepared possible [ vertical movement and rotation on the crosswise outside ], a stop salient protrudes on the outside upper limit of the aforementioned support plate towards the upper part and the aforementioned support descends, while being stopped by the inside edge of the aforementioned stop salient Body move equipment characterized by preparing the engagement shaft which arrives at a position higher than the aforementioned stop salient when this support goes up in the aforementioned support.

[Claim 2] Body move equipment indicated by the claim 1 characterized by preparing the long hole which a support shaft protrudes on the whole surface lower part of the aforementioned support plate, and engages with the aforementioned support shaft possible [ vertical movement ] at the soffit section of the aforementioned support.

[Claim 3] Body move equipment indicated by the claim 1 characterized by connecting to the end of the aforementioned rotation shaft the motor which carries out the rotation drive of this, or 2.

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**DESCRIPTION OF DRAWINGS**

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[Brief Description of the Drawings]

[Drawing 1] The whole important section surface view of the body move equipment concerning the example of this invention

[Drawing 2] The important section of the body move equipment concerning the example of this invention is a cross-section side elevation a part.

[Drawing 3] The cross section of the body move equipment in which the example of this invention is shown

[Drawing 4] standing up -- the side elevation of a member and a support plate

[Drawing 5] standing up -- the end view of a member and a support plate

[Drawing 6] The side elevation of a support

[Drawing 7] End view of a support

[Description of Notations]

1 Body Move Equipment

2 Susceptor

3 Rotation Shaft

4 Fixation -- Hole

5 Sheet

6 Standing Up -- Member

7 Support Plate

8 Support Shaft

9 Stop Salient

10 Support

11 Metallic Ornaments

12 Long Hole

13 Engagement Shaft

14 Barrel

15 Motor

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[Translation done.]

**\* NOTICES \***

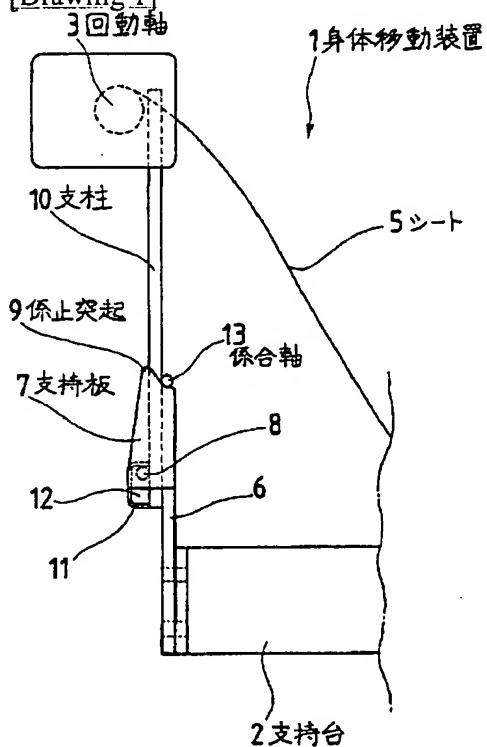
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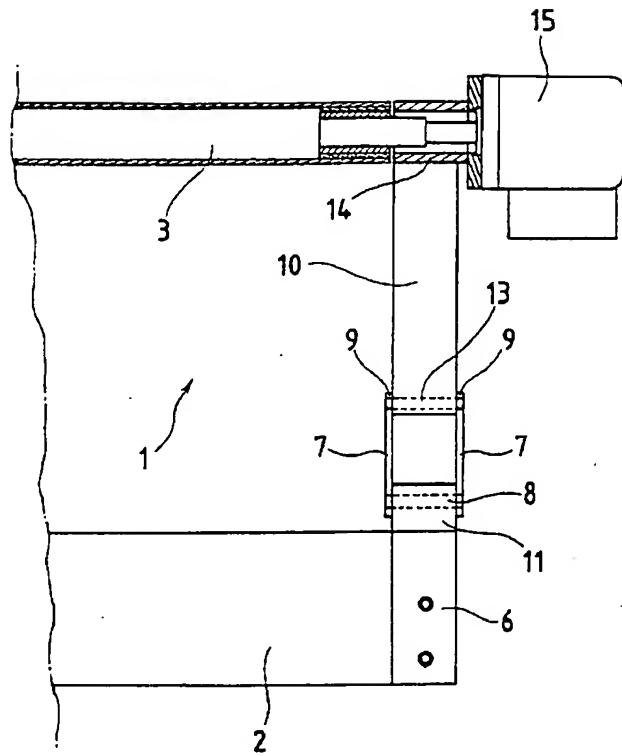
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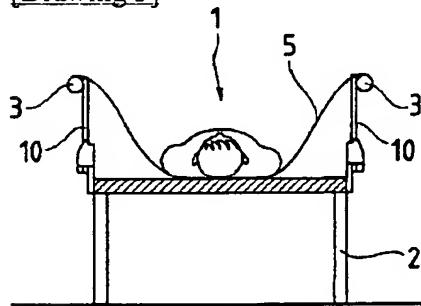
**DRAWINGS**

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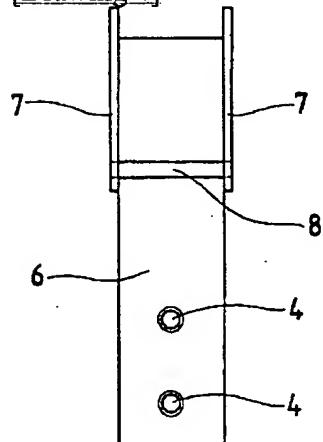
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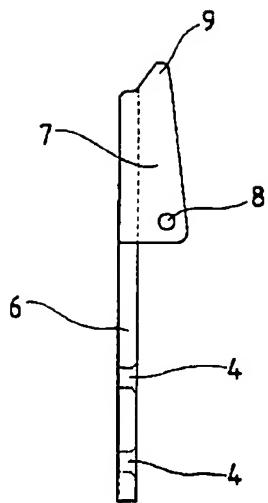
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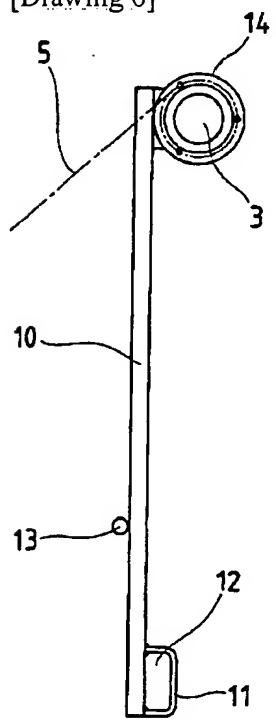
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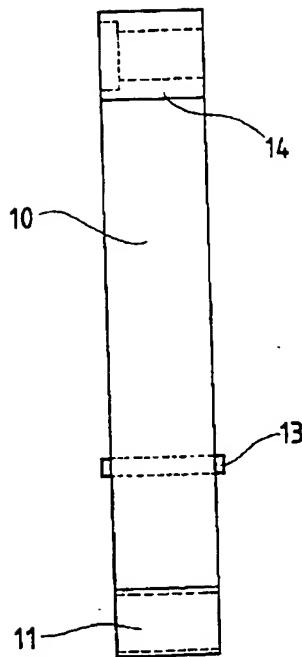
[Drawing 5]



[Drawing 6]



[Drawing 7]



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